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16 November 1970
DRAFT

MEMORANDUM

SUBJECT: Timeliness of Data Return for Near-Real-Time Imagery Satellite System

1. This memorandum discusses the factors affecting the need for rapid return of data from a near-real-time imagery satellite system. These include not only the time which elapses between the sensing of a target and the availability of that image for initial viewing by photo interpreters, but also the elapsed time required in the broader cycle of tasking, response, and exploitation which affects the dynamic uses of a near-real-time system.

2. Timeliness is an inherent characteristic of all intelligence data and has been an objective historically sought for every source. It represents a critical attribute for data bearing on the fields of indications/warning (particularly as related to the short-term indicators), rapid crises reporting, and close intelligence support for policy and military command

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decisions generated in those periods of tension and risk when US action/commitments and possible hostile counter-actions are under way.

3. The need for data return from a near-real-time imagery satellite in [redacted] as presently specified, is primarily for crisis situations and for warning/indications intelligence where as [redacted] return as possible is needed to allow the maximum time for analysis and decision; in other aspects of intelligence a data return in [redacted] is clearly beneficial but not mandatory. In certain other applications, timeliness of return is subordinate to other considerations. There is no way to place a precise price tag on the relative value of [redacted] response; or for that matter, several hours.

4. Throughout the past decade there has been major emphasis on improving capabilities for speedily alerting the national command and control authorities to critical developments. The early detection and immediate reporting of indications of imminent activities detrimental

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to US interests provides time for decision making, for deploying forces, and for timely implementation of decisions. To improve the timeliness of intelligence the intelligence community has generated high-speed reporting of significant intelligenee information, has provided rapid communications facilities and has established round-the-clock, quick-action operations and command centers. For example, the CRITICOM system has been designed and developed to make it possible for critical information, world-wide, to be reported to the highest levels of government within ten minutes.

[redacted]

5. It is axiomatic, then, that timely information is invariably preferable to delayed information, and in crises, particularly when involving repeated high-risk policy decision,

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the value of information diminishes rapidly and absolutely and may be quickly overtaken by fast-moving events. In such times information must be of the highest possible currency and reliability in order to be of use and value to decision makers. The warning of an event received after the decision maker or commander can do anything about it is worthless.

6. Crisis is defined as that crucial time, stage, or event during which US national interests are in actual or potential jeopardy. It requires prompt and intensive consideration at the highest national level together with a concurrent review of pertinent US policies and options. Under such conditions, crisis periods are characterized by an uncompromising demand for a more authoritative, continuous and timely flow of intelligence.

7. The spectrum of crisis intensity and gravity may range from informed, watchful concern (Arab-Israeli six-day war 1967) through diplomatic-political initiatives (Suez 1956 and Hungary 1956), activation of materiel support programs (Sino-Indian Border 1962), armed confrontation

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(Berlin 1961-1962), forces commitment (Berlin 1949, Korea 1950, Lebanon 1958, Dominican Republic 1965, Vietnam 1965) and on to the ultimate issues--risk of nuclear war and national survival (Cuba 1962). The fundamental characteristic inherent in all, however, is that "crisis", by definition, involves US leadership action and decision.

8. As would be the case for other intelligence sources, the highest requirement for the most rapid response with a near-real-time imagery satellite system would be in the least likely of crises, namely, one involving a great power confrontation with risk of armed engagement and possible nuclear exchange.

9. The Cuban missile crisis of 1962 is, historically, the crisis having the most serious aspects in this regard and similarly had the most compressed cycle in the daily flow of immediate intelligence. The crisis covered several stages and areas ranging from the introduction of offensive missiles, their readiness, their removal, and the status of Soviet strategic forces. Acquisition of extensive photographic coverage was under circumstances approaching near-real-time

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conditions, and there was a heavy dependence on photo-derived information in policy formulation and daily decision making. It should be noted that there was little information, and no photography, obtained during the crisis, bearing on the status of Soviet strategic forces. A 24-hour cycle of tasking, collection, and exploitation was maintained throughout.

a. Mid-Morning - Intelligence briefings, policy decisions, confirmation of reconnaissance plan.

b. [redacted] - Photo reconnaissance of Cuba.

c. [redacted] - Film delivery, processing, initial readout and reporting.

d. 2400-0600 - All-source intelligence analysis, correlation, and reporting.

e. 0700 - Policy-level briefings of previous day's results.

f. Mid-Morning cycle repeats.

Throughout the Cuban crisis there was a high premium and value on the amount of time made available to integrate the sometimes complex findings from each day's photographic

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reconnaissance with data from other intelligence sources, and policy considerations and alternatives.

10. It is recognized, for example, that even within the span of the "crisis" cycle itself, the need and urgency of timeliness will vary considerably. For the intelligence community, a crisis cycle encompasses usually a broad, multiphased time span over which critical or threatening developments have evolved and during which there has been a process of systematic identification, evaluation, collation, and validation of the "indications" pattern that ultimately provides the basis for intelligence warning. To the command and policy echelons served by intelligence, however, the "crisis cycle" begins upon initial receipt of "warning" and essentially consists of the period when decision and action are under way.

11. To contribute vital inputs to the warning/indications intelligence process it is necessary for an imagery satellite system to provide rapid return of data. Little flexibility is possible in the time it takes the satellite to reach its target, or in the weather conditions in the area. Either can inhibit immediate

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response. When a successful image has been obtained, however, it is important to transmit the information rapidly to allow immediate evaluation, and to allow other sources (including imagery) to be tasked for additional or follow-up collection if necessary.

12. Implicit in performance of the daily warning/indications intelligence function is the need for daily sampling of targets, the requirement for a system (or systems) on orbit full time with the capability to deliver imagery to the ground for analysis soon after sensing has been achieved. Aside from the obvious advantages stemming from the ability to program for further coverage in full knowledge of information already acquired, the system, when called upon, should be able to deliver coverage of key installations to the decision authority within a few hours after sensing with the maximum proportion of this time available for interpretation and analysis.

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13. In a crisis, whether resulting from increasing tensions or from sudden indication of an enemy alert, a capability for quick coverage of targets and receipt of information on them is mandatory if the premise of buying time for decision making in times of critical threat is accepted as an important consideration. It does not follow, however, that a quick-response system should be operated only when it is established that a crisis exists, for this introduces the probability that the capability will not be available when needed. Thus, once an imagery system capable of providing rapid return of warning-indications information becomes operative, it must be used regularly and constantly, both to perfect management techniques and to compile and continually update the data base of information for warning purposes which contains the norms against which degrees of abnormality are measured. This data base, in all probability, will include many targets of high priority current interest.

14. In summary, the timeliness of data return is only one element in a larger cycle of tasking-response-utilization, and even with the capability [redacted] return of

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imagery after sensing, it may take hours or even days to obtain imagery after a need has been identified. It takes time for the imagery satellite to reach its target and adverse weather can inhibit collection on the first opportunity. A response time of [redacted] for a near-real-time imagery satellite system has clear value, however, because it affords the maximum amount of time under any circumstances for analysis of the imagery and the use of the findings to task other collection systems. It represents the objective to be attained if technically or economically feasible. While no precise distinction is possible between the value of [redacted] [redacted] response, there is a requirement for the system to be able to perform within a 24-hour cycle which, in a crisis, involves time-consuming phases in addition to those required for tasking and response from an imagery system. A near-real-time imagery satellite system will inevitably have multipurpose capabilities against many intelligence problems, in addition to those related to crises or warning/indications. Rapidity of response will be beneficial in many of these areas, although not mandatory.

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MEMORANDUM FOR: Dr. Proctor

Attached for final coordination and comment is the latest draft of the "timeliness" memorandum. I am completing a potential attachment which would contain a table and detailed description of the tasking and response cycle. We will need to decide whether it should be added to this.

OK with me - I made one suggestion to Rod. EWP

R. Inlow

17 November 1970
(DATE)

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